Biology Pacing Guide

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| BIOLOGY CONCEPT | SOL | Block Pacing | **Prentice Hall**  **Chapters** | **Holt Chapters** |
|  |  | **(In Blocks)** |  |  |
| 1. Scientific Method | 1 | 2 | 1.1-1.2, 1.3 | 1 |
| 2. Features of Life | 2; 3c; 5b | 2 | 1.3 | 1 |
| 3. Chemistry of Life   * Water chemistry * Structure and function of macromolecules * Nature of enzymes | 1 h; 2a, b, c | 5 | 2 | 3 |
| 4. Ecology   * Abiotic and biotic factors * Levels of the ecosystem * Interactions within and among populations (carrying capacity, limiting factors, growth curves, symbiosis) * Nutrient cycling and energy flow * Succession * Effects of natural and human activities * Flora, fauna and microorganisms of Virginia | 8; 1 a | 7 | 3 – 6 | 4-6 |
| 5. Microscope | 1 h, i,  3 a, b | 2 | 7.1 |  |
| 6. Cells   * Cell Theory * Prokaryotes and Eukaryotes * Activities of single cell vs. whole organism * Cell membrane * Impact of surface area to volume on life processes | 3 | 5 | 7.1-7.2, 7.4 | 7 |
| 7. Cell Transport   * Diffusion * Osmosis * Active Transport * Impact of surface area to volume on material transport | 3 c, d, e | 3 | 7.3 | 8 |
| 8. Photosynthesis & Respiration   * ATP * Capture, storage, transformation, and flow of energy | 2 d; 8 b; 1 | 5 | 8, 9 | 9 |
| 9. Mitosis/Meiosis   * Impact of surface area to volume on cell division * Cell growth and division * Gamete formation * Cell specialization | 5 a, b, c 3e | 3 | 10, 11.4 | 10, 11 |
| 10. DNA/RNA/Protein Synthesis   * Structure of DNA * Genetic variation (mutation, recombination, deletions, additions) * Replication of DNA * Transcription and translation * Use, limitations, misuse of genetic information * DNA technologies | 5 e, f, g, h, i, j | 7 | 12 | 13 |
| 11. Genetics   * Introduction to genetics * Prediction of inheritance of traits based on Mendelian laws of heredity * Non-Mendelian patterns of inheritance (multiple alleles, polygenic inheritance, sex-linked) * Genetic engineering, Human Genome Project, and cloning | 5 d, f, I, j | 7 | 11, 13, 14 | 12, 14, 15 |
| 12. Evolution & Natural Selections   * Fossil evidence * Natural selection and adaptations * Emergence of new species * Biochemical similarities and differences among organisms | 7; 6 b, d | 8 | 15, 16, 17 | 16, 17, 19 |
| 13. Classification of Organisms   * Classification system based on structural and biochemical similarities and differences * Archaea * Bacteria * Eukarya (protists, fungi, plants and animals) * Viruses * Evidence supporting the germ theory of infectious disease | 3 a, b; 4; 6 a, d, e | 15 | 18, 19 – 34 | 18, 20-33 |
| 14. Body Systems, Reproduction and Development   * Human anatomy and body systems * Human health issues * Comparision of developmental stages in different organisms | 4 d, 6c | 5 | 35 – 40 | 34-40 |
| 15. Review for SOL |  | 2 |  |  |
| 16. Dissection | 1 a, h; 4 d | 5 |  |  |

NOTE: There are 36 weeks in the school year and this schedule is for 33 weeks. This allows the SOLs to be covered before the test is administered and accounts for a semester exam or for 9 weeks testing. This is a tight schedule that does not leave any time for missed or shortened days.